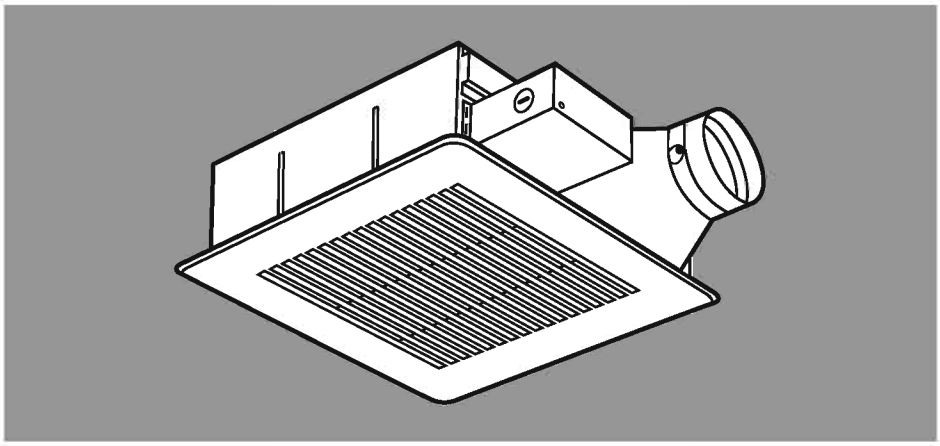
INSTALLATION INSTRUCTIONS

FV-05VS1
FV-08VS1
FV-10VS1

Ventilating Fan



Panasonic®

READ AND SAVE THESE INSTRUCTIONS.

Please read these instructions carefully before attempting to install, operate or service the Panasonic Ventilating Fan. Failure to comply with instructions could result in personal injury and/or property damage. Please retain this booklet for future reference.

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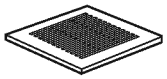
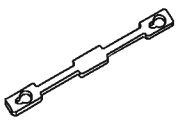
SUPPLIED ACCESSORIES

FV-05VS1
FV-08VS1
FV-10VS1

Part name	Appearance	Quantity
Grille		1
Long screw (ST4.2X20)		6
Thumb screw		1
Screw Ⅰ (ST4.2X8)		2
Screw Ⅱ (ST4.2X10)		2
Suspension bracket Ⅰ		1
Suspension bracket Ⅱ		1
Suspension bracket Ⅲ		1
Spacer		1

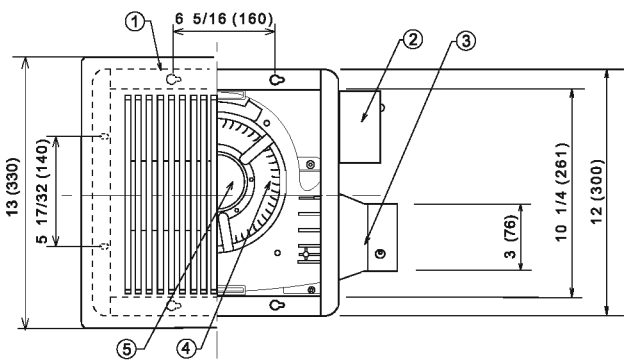
DESCRIPTION

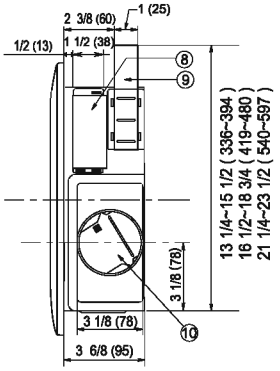
These Panasonic ceiling /wall mount ventilation fans use a sirocco fan driven by a capacitor motor. The motor is designed to have an extended service life with reduced energy consumption. It also incorporates a thermal-cutoff for safety. The grille covering the main body is a spring-loaded, quick-release type. A damper for preventing counterflow is provided.

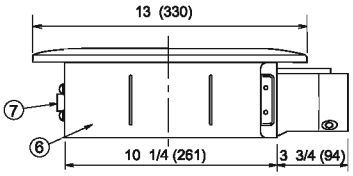
DIMENSIONS

FV-05VS1 FV-08VS1

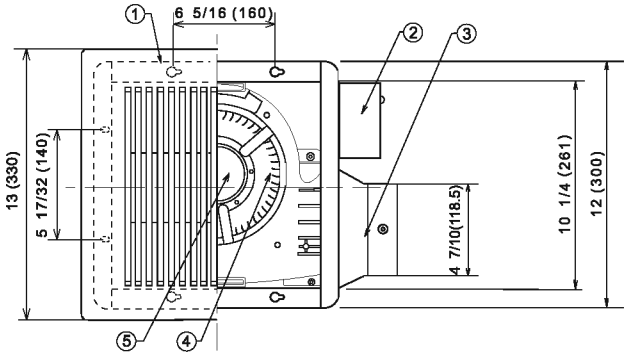
Unit: inches (mm)

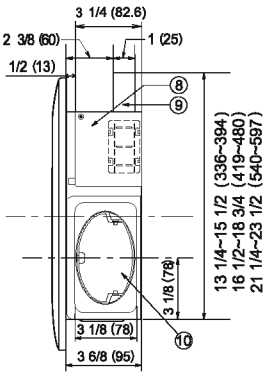


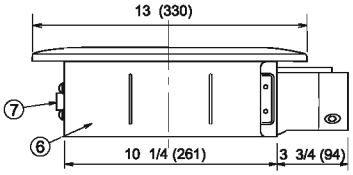




FV-10VS1







No.	Part name	No.	Part name
1	Grille	6	Fan body
2	Junction box cover	7	Bracket cover
3	Adaptor	8	Junction box
4	Blade	9	Suspension bracket
5	Motor	10	Damper

(For 16 inches on center joists, only use suspension bracket Ⅰ. For 19.2 inches on center joists, only use suspension bracket Ⅲ. If more than 19.2 inches on center joists, use suspension bracket Ⅱ & Ⅲ.)

SPECIFICATIONS

Model No.	Air direction	Voltage (V)	Frequency (Hz)	Duct diameter (inches)	Noise (sones)	Power consumption (W)	Speed (rpm)	Air deliver (cfm) at 0.1" WG.	Weight lb.(kg)
FV-05VS1	Exhaust	120	60	3	0.8	18	759	50	9.9 (4.5)
FV-08VS1				3	1.4	26	887	80	9.9 (4.5)
FV-10VS1				4	1.5	34	773	100	10.1(4.6)

Specifications are based on HVI standard.

UNPACKING

Unpack and carefully remove unit from carton.
Refer to the Supplied Accessories list to verify that all parts are present.

GENERAL SAFETY INFORMATION

1. Do not install this ventilating fan where interior room temperature may exceed 104°F (40°C).
2. Make sure that the electric service supply voltage is 120 V, 60 Hz.
3. Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupation Safety and Health Act (OSHA).
4. Always disconnect the power source before working on or near the fan, motor or junction box.
5. Protect the power cord from sharp edges, oil, grease, hot surfaces, chemicals or other objects.
6. Do not kink the power cord.
7. Do not install the unit where ducts are configured as shown in Fig. A.
8. Provide suction parts with proper ventilation.

Fig. A

GENERAL SAFETY INFORMATION CONTINUED

CAUTION:

1. For general ventilating use only. Do not use to exhaust hazardous or explosive materials and vapors.
2. Not for use in cooking area. (Fig. B)
3. This product must be properly grounded.

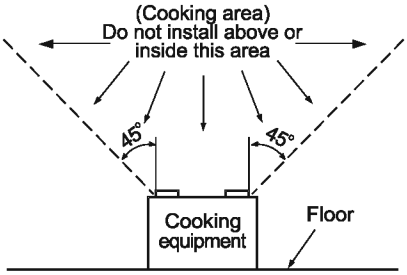


Fig. B

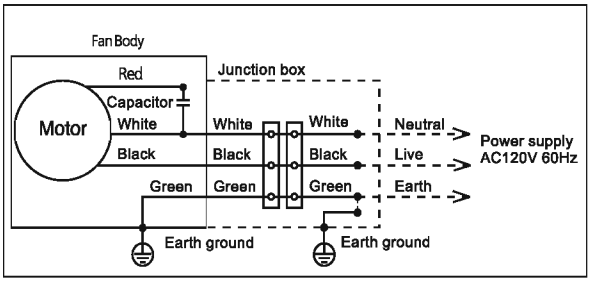
WARNING:

To reduce the risk of fire, electric shock or injury to persons, observe the following:

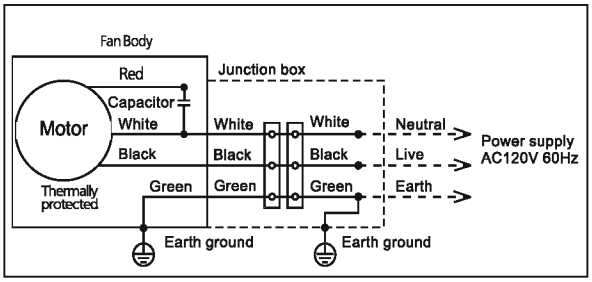
1. Use this unit only in the manner intended by the manufacturer. If you have any questions, contact to the manufacturer.
2. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
3. Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating Refrigeration and Air Conditioning Engineers (ASHRAE) and the local code authorities.
4. When cutting or drilling into wall or ceiling, do not damage electrical wiring and other hidden utilities.
5. Ducted fans must always be vented to the outdoors.
6. These models are UL listed for tub and shower enclosures.
7. Solid state controls may cause harmonic distortion which can cause motor humming noise. To reduce the risk of fire or electric shock, do not use this unit with any solid-state control device.
8. Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
9. If this unit is to be installed over a tub or shower, it must be marked as appropriate for the application and be connected to a GFCI (Ground Fault Circuit Interrupter) - protected branch circuit.
10. NEVER place a switch where it can be reached from a tub or shower.
11. Not to be installed in a ceiling thermally insulated to a value greater than R40. (This is required for installation in Canada only.)
12. Install the fan at least 1.5m (5 feet) above the floor, and the fan must be installed above a counter or major appliances that serves as a barrier.

WIRING DIAGRAM

FV-05VS1 FV-08VS1



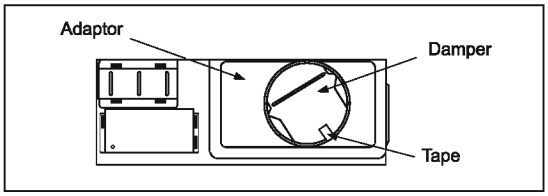
FV-10VS1



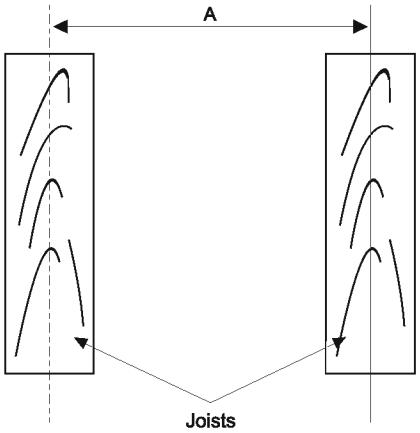
INSTALLATION I (JOIST MOUNTING-I)

1. Before installation, secure the fan body to adaptor by using thumb screw. (Fig.1)

IMPORTANT :
Remove the tape from damper and adaptor before installation. As shown below:

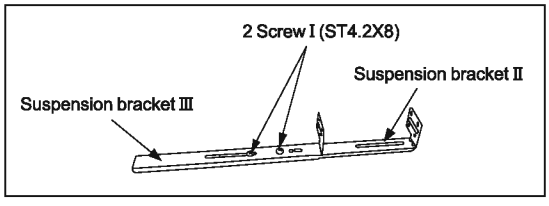


2. Insert the supension bracket into the fan body and adaptor. (Select the suspension bracket as shown below)



Spacing A on center joists	Insert Suspension bracket
12 inches	Refer to Fig. 2-1
16 inches	Refer to Fig. 2-2
19.2 inches vertical joists	Refer to Fig. 2-3
24 inches	Refer to Fig. 2-4

If spacing A on center joists is 24 inches, connect suspension bracket Ⅱ and Ⅲ(C4 mark to C4 mark) as shown below :



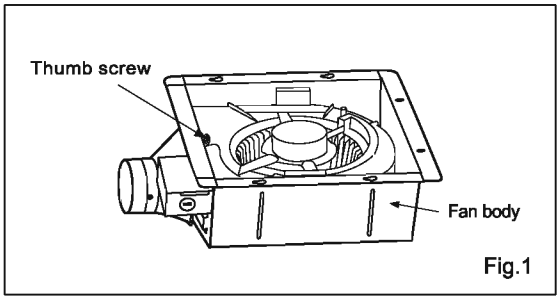


Fig.1

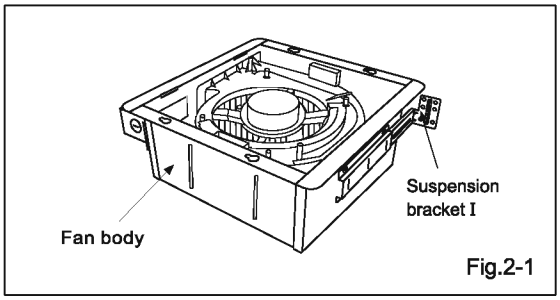


Fig.2-1

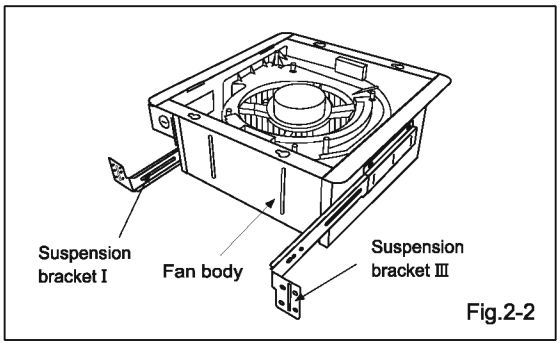


Fig.2-2

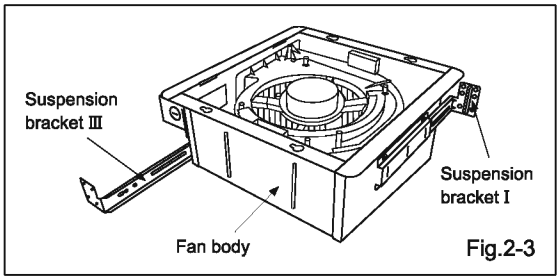


Fig.2-3

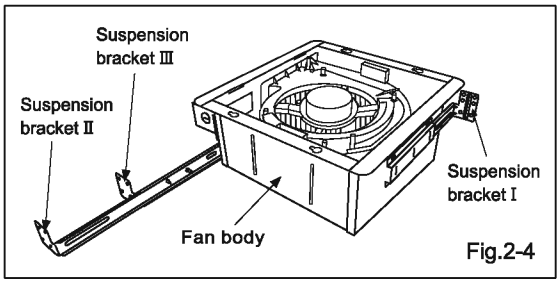


Fig.2-4

INSTALLATION I (JOIST MOUNTING-I) CONTINUED

3. Install the suspension bracket and the flange of fan body to joists by using long screws (ST4.2X20) according to Fig. 3.

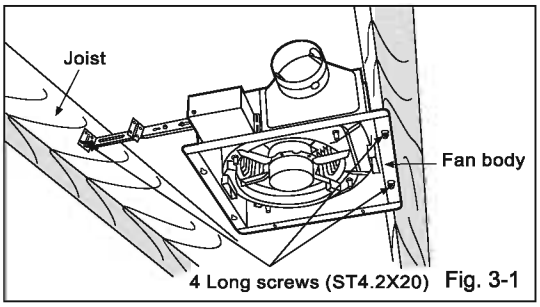


Fig. 3-1

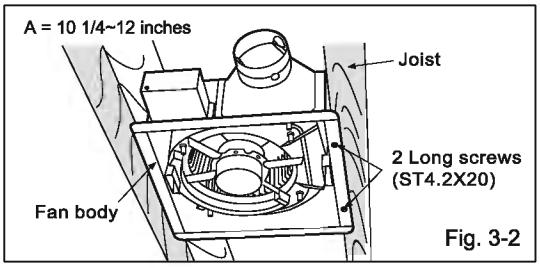


Fig. 3-2

4. Install the suspension bracket to joists by using long screws (ST4.2X20) and secure it to the fan body by using screw Ⅱ (ST4.2X10). (Fig. 4)

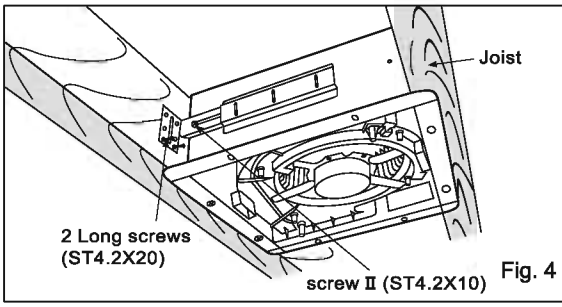


Fig. 4

5. Remove junction box cover and secure conduit or stress relief to junction box knock-out hole. (Fig. 5)

6. Refer to wiring diagram (page 5).
   Using wire nuts, connect house power wires to ventilating fan wires:
   black to black; white to white; green to green;
   Replace the junction box cover. (Fig. 5)

CAUTION:
Mount junction box cover carefully so that lead wires are not pinched.

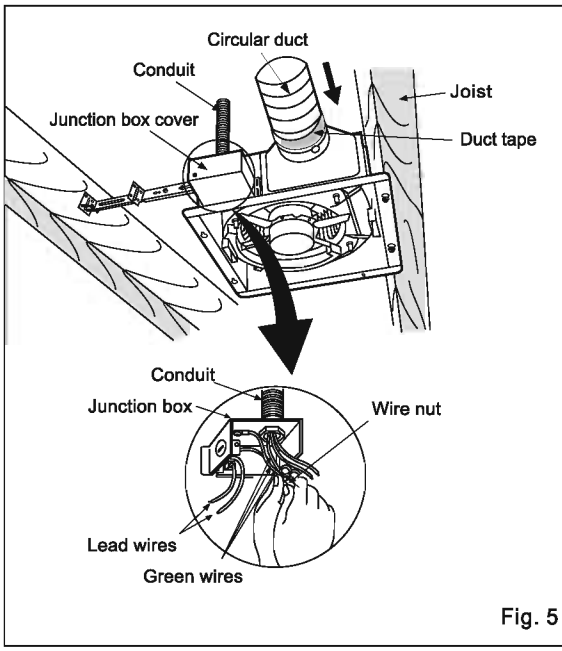
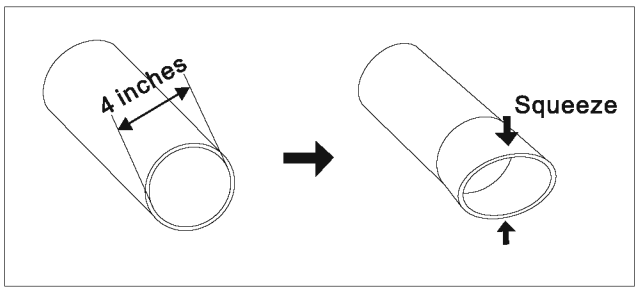


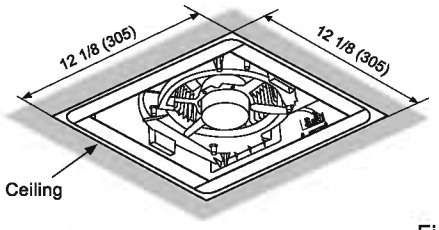
Fig. 5

7. FV-05VS1 /FV-08VS1: install a circular duct and secure it with duct tape.
   FV-10VS1: squeeze the circular duct to fit the adaptor, then slipped onto the adaptor and secure it with duct tape.



INSTALLATION I (JOIST MOUNTING-I) CONTINUED

8. Finish ceiling work. Ceiling hole should be aligned with the edge of the flange. (Fig. 6)



Unit: inches (mm)

Fig. 6

9. Insert mounting springs into slots as shown and mount grille to fan body. (Fig. 7)

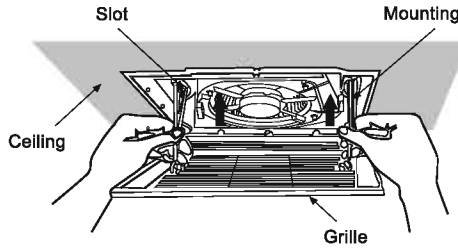


Fig. 7

INSTALLATION II (JOIST MOUNTING-II)

1. Disconnect plug connector from receptacle and remove adaptor from fan body before starting installation.

2. Insert the suspension bracket into the adaptor and secure it to joists by using long screws (ST4.2X20). (Fig. 8)

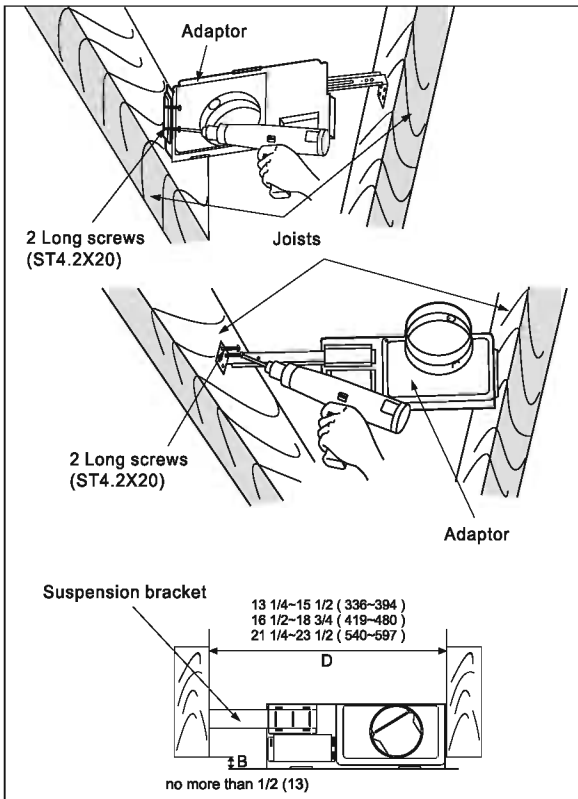
CAUTION:
Ensure that distance B is no more than 1/2 inch (13 mm).

If spacing D between joists is 21 1/4 to 23 1/2 inches, connect suspension bracket II and III (C4 mark to C4 mark) according to page 6. Select the suspension bracket according to spacing D as shown below.

Spacing D between Joists inches (mm)	13 1/4~15 1/2 (336~394)	16 1/2~18 3/4 (419~480)	21 1/4~23 1/2 (540~597)
suspension bracket	suspension bracket I	suspension bracket III	suspension bracket II & III

3. Follow step 5 to 7 of the Installation I (page 7) to complete the duct work and wiring.

4. Insert the suspension bracket into fan body (refering to step 2 of Installation I, page 6).



Unit: inches (mm)

Fig. 8

INSTALLATION Ⅱ (JOIST MOUNTING-Ⅱ) CONTINUED

5. Insert the fan body into joists. (Fig. 9)

IMPORTANT:
Make sure that adaptor claws are properly inserted into body slots.

6. Secure the fan body to adaptor by using thumb screw and plug connector to receptacle. (Fig. 10)

7. Secure the suspension bracket to joists by using long screws (ST4.2X20) and secure it to fan body by using screw Ⅱ (ST4.2X10) in vertical direction. (Fig. 11)

8. Follow step 8 to 9 of Installation I (page 8) to complete the installation work.

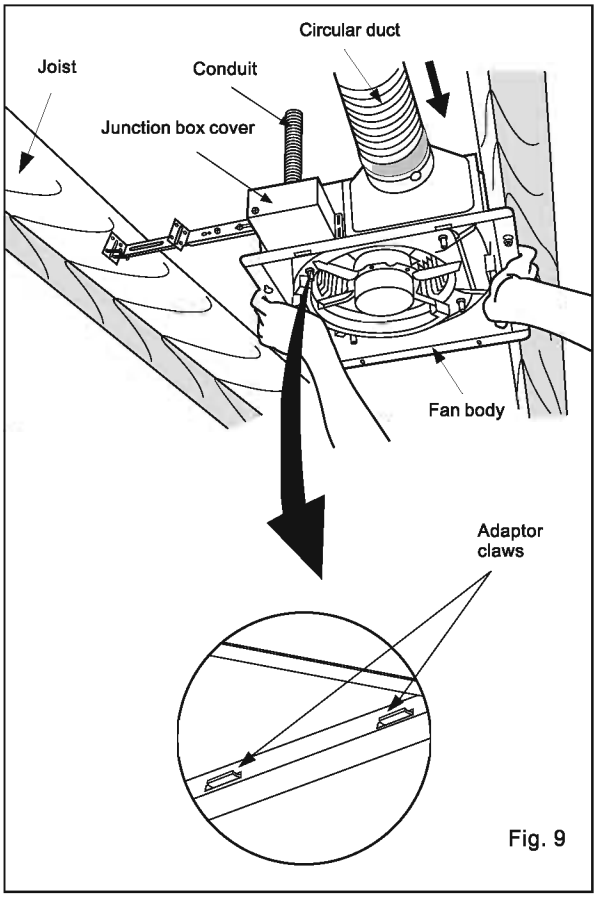


Fig. 9

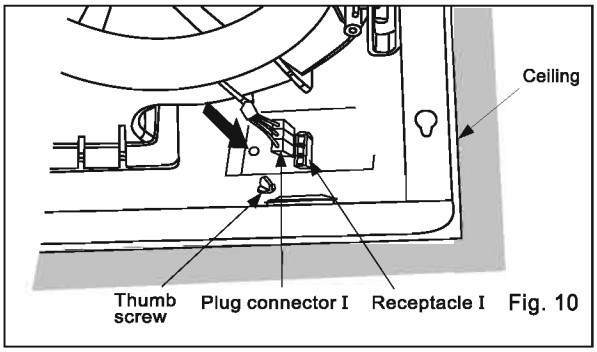


Fig. 10

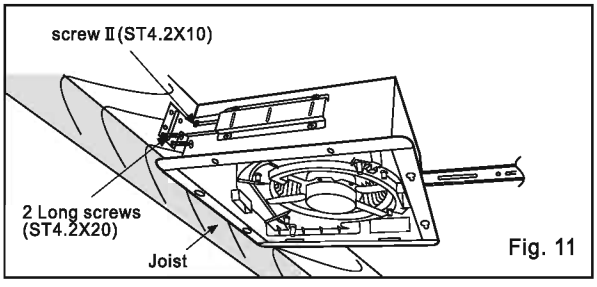


Fig. 11

When mounting body and blower separately

1. Loosen 4 screws (but do not remove them from blower). (Fig. 12-1)

2. Remove blower section. (Fig. 12-2)

3. Remove adaptor from fan body and secure it to joists as in Fig. 8 of page 8.

4. Insert fan body (without blower section) into joists. (Fig. 9)

5. Secure the adaptor to fan body by using thumb screw. (Fig. 10)

6. Secure the fan body to joists by using long screw (ST4.2X20). (Fig. 11)

7. Insert the blower into the fan body. (Fig. 12-3)

8. Secure the blower. (Fig. 12-4) and plug connector to receptacle. (Fig. 10)

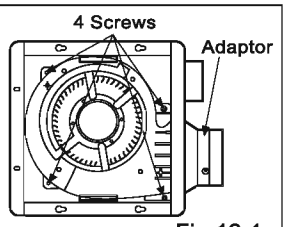


Fig.12-1

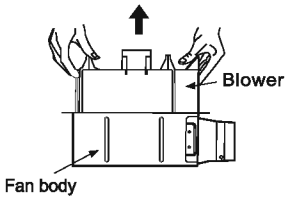


Fig.12-2

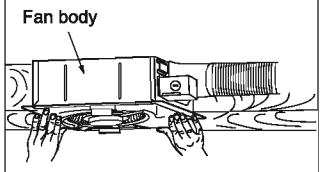


Fig.12-3

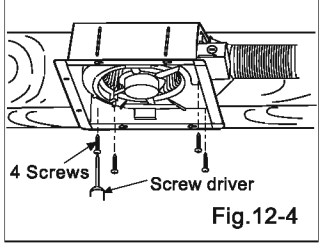
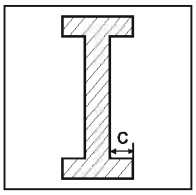
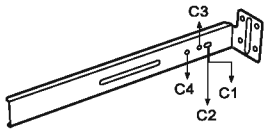


Fig.12-4

INSTALLATION Ⅲ (I-JOIST MOUNTING)



4 kinds of I-joist inches (mm)		hole mark
C	9/16 (14.3)	C1
	11/16 (17.5)	C2
	31/32 (24.6)	C3
	1 17/32 (38.9)	C4



Suspension bracket Ⅲ
The suspension bracket Ⅲ can comply with different kinds of I-joist.

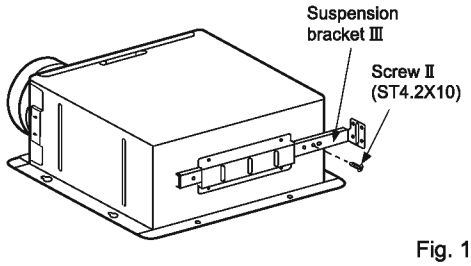


Fig. 13

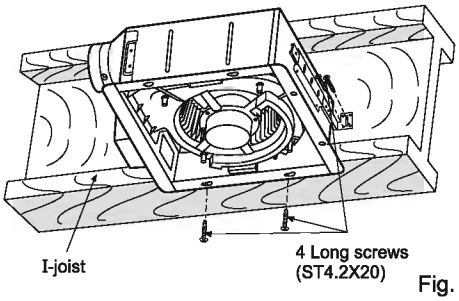
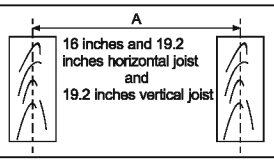


Fig. 14

1. Before installation, secure the fan body to adaptor by using thumb screw. (Fig. 1 of page 6)
2. Connect the suspension bracket Ⅲ to fan body. (Fig. 13) (Select the hole by checking I-joist size fix the screw to the frame hole.)
3. Connect the ventilating fan to the I-joist. (Fig. 14)
4. Follow step 5 to 9 of installation I (page 7, page 8) to complete the installation work.

INSTALLATION Ⅳ (BETWEEN JOIST MOUNTING)

1. Before installation, secure the fan body to adaptor by using thumb screw. (Fig.1 of page 6)
2. Insert the suspension bracket into the bracket cover of adaptor side and the back of the fan body. (Fig.15) (select the suspension bracket according to spacing A as shown below)



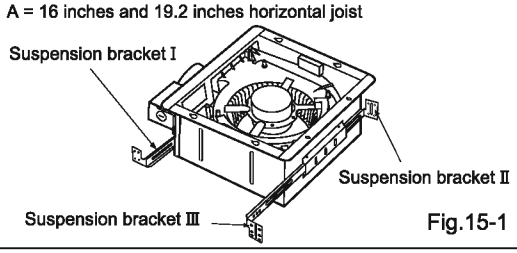


Fig.15-1

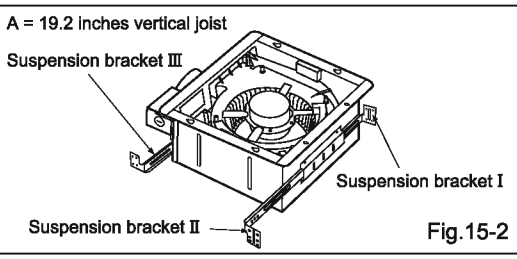
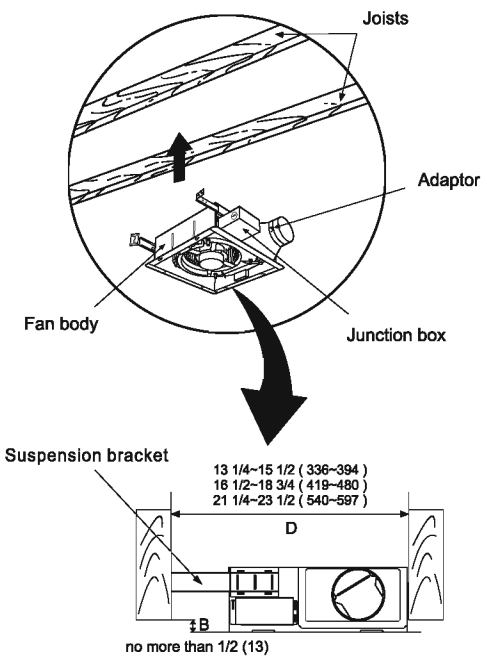


Fig.15-2

INSTALLATION Ⅳ (BETWEEN JOIST MOUNTING) CONTINUED

3. Insert the fan body between joists.
   Make sure the fan body is level and square (perpendicular) with the joists. (Fig. 16)

CAUTION:
Ensure that distance B is no more than 1/2 inch (13 mm).



Unit: inches (mm)

Fig. 16

4. Secure the suspension bracket to joists by using long screws (ST4.2X20). (Fig. 17, Fig. 18)

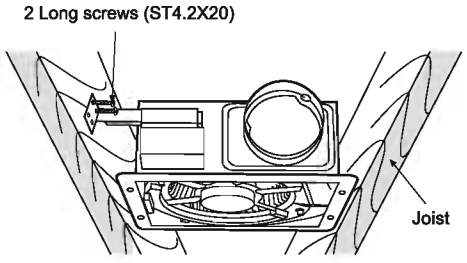


Fig. 17

5. Secure the suspension bracket to fan body by using screw Ⅱ (ST4.2X10). (Fig. 18)

6. Follow step 5 to 9 of installation Ⅰ (page 7, page 8) to complete the installation work.

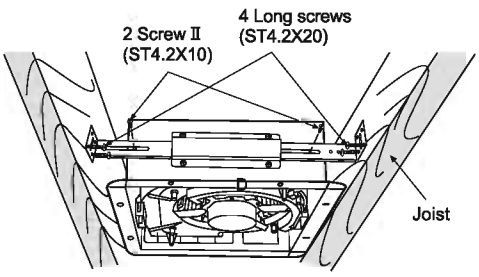


Fig. 18

INSTALLATION Ⅴ (WOODEN HEADER)

1. Before installation, secure the fan body to adaptor by using thumb screw. (Fig. 1 of page 6)

2. Install header between joists by using nails or screws.

3. Install the ventilating fan and secure it by using long screws (ST4.2X20). (Fig. 19, Fig. 20)

4. Follow step 5 to 9 of installation Ⅰ (page 7, page 8) to complete the installation work.

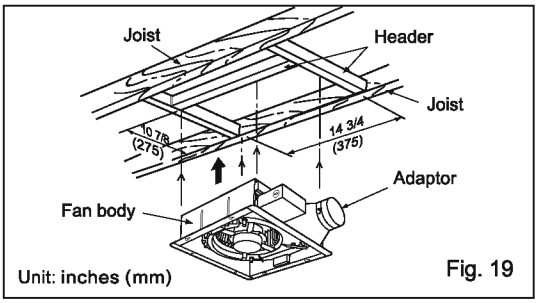


Fig. 19

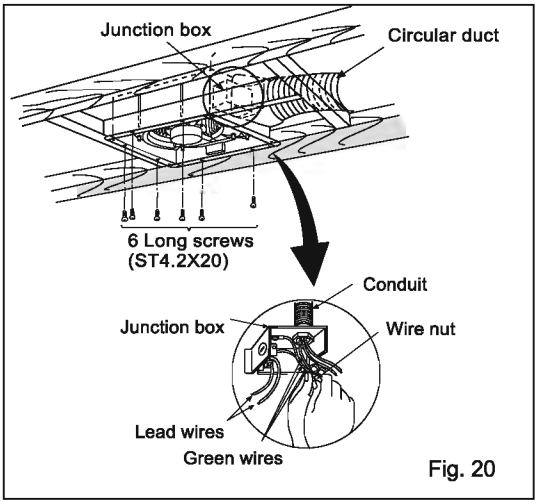


Fig. 20

INSTALLATION Ⅵ (IN EXISTING CONSTRUCTION)

1. Installation in existing construction.
   Installing the ventilating fan in an existing building requires an accessible area (attic or crawl space) above the planned installation location or existing ducting and wiring.
   (1) To install the ventilating fan, follow the procedures described in Installation Ⅱ. Take the following precautions before installation.

CAUTION:
Check area above planning installation location to be sure that:
1. Duct work can be done and that area is sufficient for proper ventilation.
2. Wiring can be run to planned location.
3. No wiring or other obstructions shall interfere with installation.

   (2) Inspect duct work and wiring before proceeding with installation.
   (3) Plan suitable location for ventilating fan. (next to ceiling joist)
   (4) Before installation, provide inspection and maintenance access at a location that will not interfere with installation work shown in installation Ⅱ.
   (5) First, remove ceiling section according to Fig. 6 of page 8.
   (6) Install ventilating fan.

2. Installation from accessible area above fan location.
   (1) Inspect duct work and wiring before proceeding with installation.
   (2) Remove ceiling section according to Fig. 6 of page 8.
   (3) Install ventilating fan.

INSTALLATION Ⅶ (WALL INSTALLATION-Ⅰ)

IMPORTANT:
When the product is installed on the wall, the adaptor shall be faced upward. (Fig. 21)

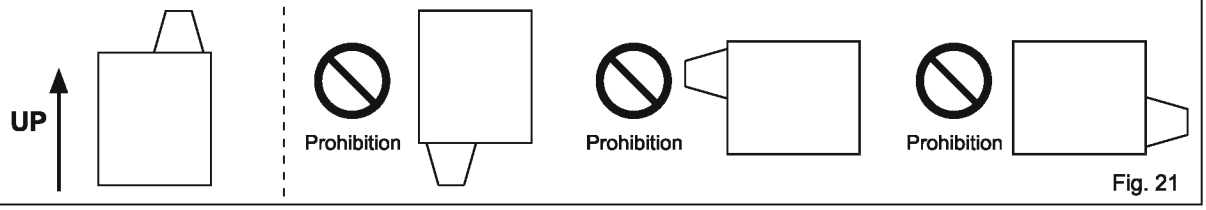


Fig. 21

1. Disconnect plug connector from receptacle and remove adaptor from fan body before starting installation. (Fig. 22)

2. Insert the suspension bracket into the adaptor. (refer to step 2 of installation Ⅱ of page 8).

3. Secure it to stud by using long screws (ST4.2X20). (Fig. 23)

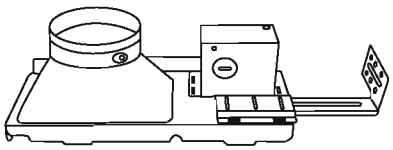
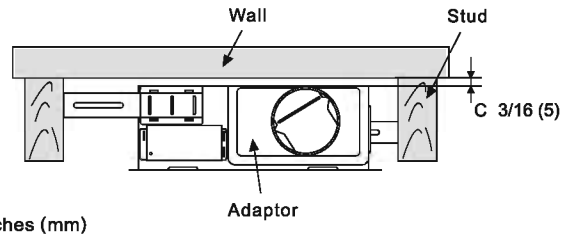


Fig. 22

IMPORTANT:
Ensure distance C is 3/16 of an inch (5 mm) during the installation process as follows.



Unit: inches (mm)

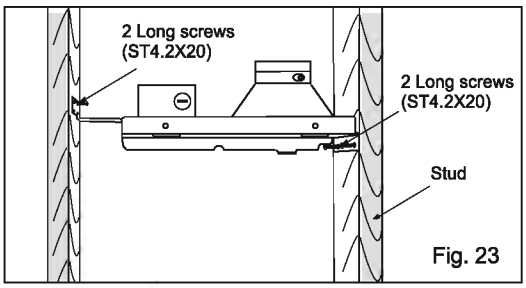


Fig. 23

4. Insert the suspension bracket into fan body (refer to step 2 of installation I, page 6).

5. Secure the fan body to the studs by using long screws (ST4.2X20) (refer to step 5 to step 7 of installation II of page 9). (Fig. 24)

6. Complete the duct work and wiring (refer to step 5 to 7 of the installation I of page 7).

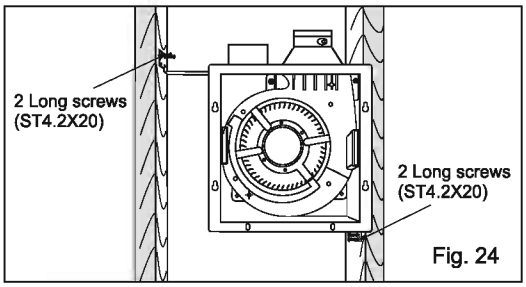


Fig. 24

7. Finish the wall work, wall hole should be aligned with the edge of the flange. (Fig. 25)

8. Insert the mounting spring into slots and mount grill to fan body (refer to step 9 of installation I of page 8).

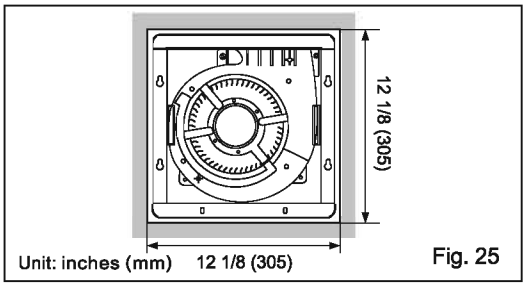


Fig. 25

INSTALLATION Ⅷ (WALL INSTALLATION-Ⅱ)

2. Insert the suspension bracket into bracket cover of adaptor side and the back of the fan body (refer to Fig.15-1 of page 10).
3. Insert the fan body between studs. Make sure the fan body is level and square(prependicular) with the stud. Ensure that distance C 3/16 inch (5mm).
4. Secure the suspension bracket to studs by using long screws (ST4.2X20). (Fig. 26, Fig. 27)
5. Secure the suspension bracket to fan body by using screw Ⅱ (ST4.2X10) (refere to Fig. 4 of page 7).
6. Complete the duct work and wiring (refere to step 5 to 7 of the installation Ⅰ of page 7).
7. Follow step 7 to 8 of the installation Ⅶ to complete installation work.

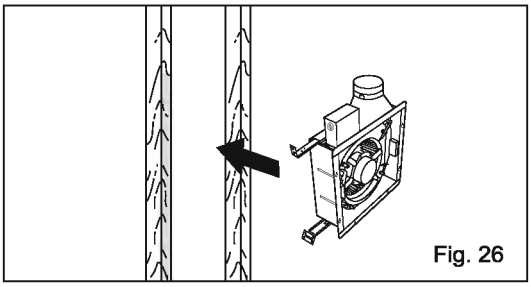


Fig. 26

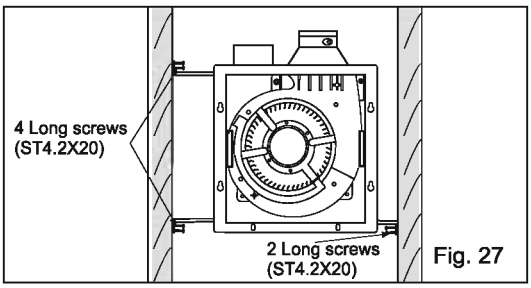


Fig. 27

INSTALLATION Ⅸ (WALL INSTALLATION-Ⅲ)

INSTALLATION Ⅸ (WALL INSTALLATION-Ⅲ) CONTINUED

4. Secure the suspension bracket to the wall stud using long screws (ST4.2X20). Secure the fan body and spacer to stud using long screws (ST4.2X20). (Fig. 29)

5. Complete the duct work and wiring (refer to steps 5 to 7 of the installation Ⅰ on page 7).

6. Follow step 7 to 8 of the installation Ⅶ to complete installation work.

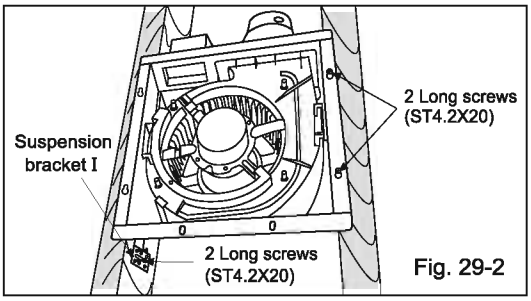


Fig. 29-2

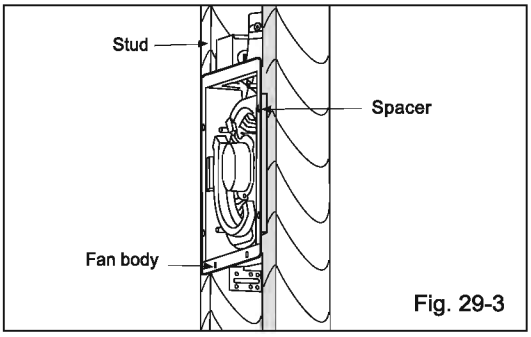


Fig. 29-3

MAINTENANCE (FOR THE EXAMPLE OF CEILING INSTALLATION)

WARNING:
Disconnect power source before working on unit. Routine maintenance must be done every year.

CAUTION:
1. Never use petrol, benzene, thinner or any other such chemicals for cleaning the ventilating fan.
2. Do not allow water to enter motor.
3. Do not immerse resin parts in water over 60°C.

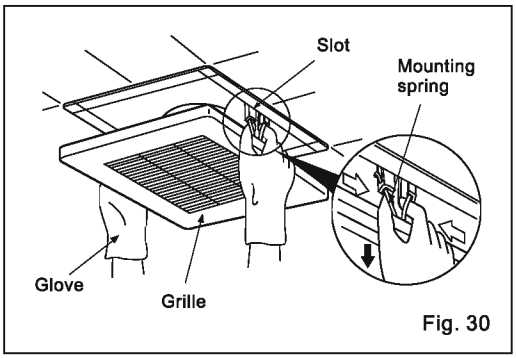


Fig. 30

1. Remove grille. (Squeeze mounting spring and pull down carefully.) (Fig. 30)

2. Wash and clean grille. (Use non-abrasive kitchen detergent, wipe dry with new cloth.) (Fig. 31)

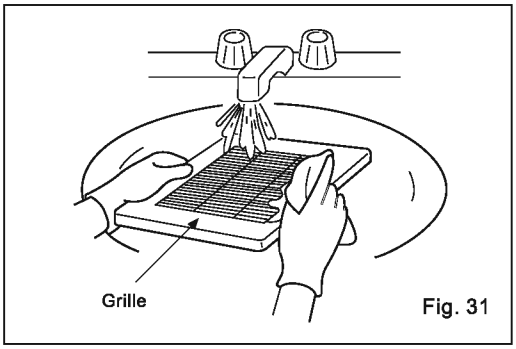


Fig. 31

MAINTENANCE (FOR THE EXAMPLE OF CEILING INSTALLATION)

3. Remove dust and dirt from fan body using a vacuum cleaner. (Fig. 32)

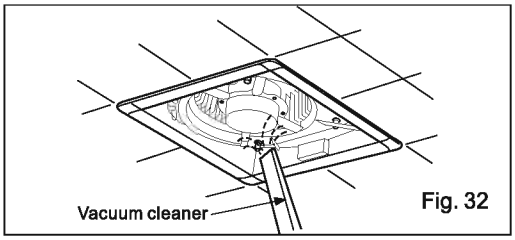


Fig. 32

4. Using a cloth dampened with kitchen detergent, remove any dirt from fan body. Wipe dry with new cloth. (Fig. 33)

5. Replace grille.

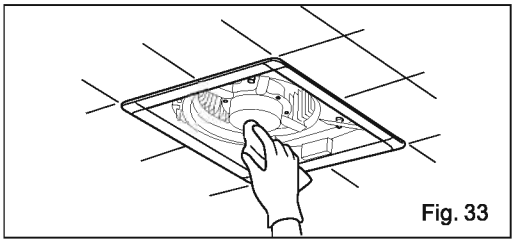
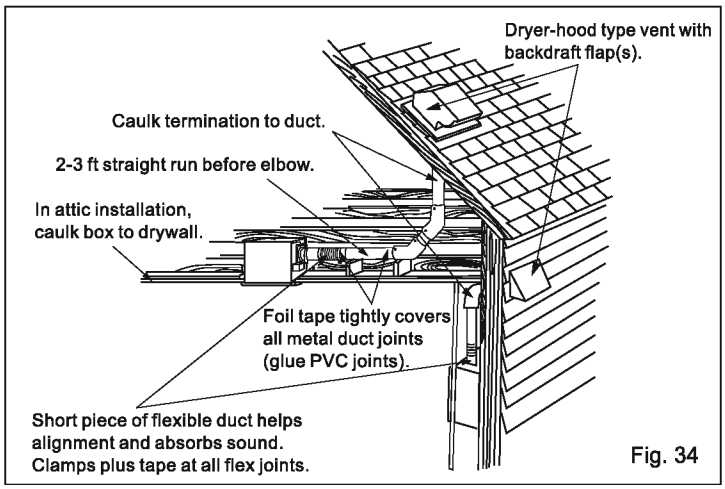


Fig. 33

PRACTICAL GUIDE TO INSTALLATION

Properly insulate the area around the fan to minimize building heat loss and gain. (Fig. 34)

Loose fill or batt insulation can be placed directly over the fan housing in the attic. Panasonic fans and fan/light combination units do not create excessive heat that is a common problem with recessed light fixtures or some competitors' fan/light combinations. Our efficient, cool-running motors and our fluorescent bulbs do not create enough ambient heat to be subjected to these limitations.


Dryer-hood type vent with backdraft flap(s).
Caulk termination to duct.
2-3 ft straight run before elbow.
In attic installation, caulk box to drywall.
Foil tape tightly covers all metal duct joints (glue PVC joints).
Short piece of flexible duct helps alignment and absorbs sound. Clamps plus tape at all flex joints.
Fig. 34

PRODUCT SERVICE

Warning Concerning Removal of Covers.

The unit should be serviced by qualified technicians only. No service information is provided for customers. Your product is designed and manufactured to ensure a minimum of maintenance. However, should your unit ever require service, a nationwide system of factory service centers and AUTHORIZED INDEPENDENT SERVICE CENTERS is maintained to support your product's warranty.
(In the U.S.A.,call 1-866-292-7292 to Customer call center.)

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